UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

MONTHLY REPORT
OFFICE OF FOREST EXPERIMENT STATIONS AND DENDROLOGY

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GOVERNMENT PRINTING OFFICE

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MONTHLY REPORT

OFFICE OF FOREST EXPERIMENT STATIONS AND DENDROLOGY

January, 1924

FOREST EXPERIMENT STATIONS

Washington

The preparation for the Madison meeting, involving the final formulation of the program and the beginning of the mimeographing and distribution of the public requirements reports took up a considerable portion of the time of the office. The work is now so organized that there will be very little delay in getting out the reports to the field in time for consideration at the Madison meeting. It now appears that about 30 or 40 men will be in attendance at Madison during overlapping periods.

All the volume tables in the files here in Washington have been very carefully considered for publication on volume tables. It has finally been decided, however, that it would be best, in view of the large number of volume tables at hand to issue three separate publications as handbooks, one dealing with the western species, one with the eastern conifers and one with the hardwoods. Some minor changes will be necessary in the work as it now stands, and it is expected that these will be made and the material forwarded to the Printing Office some time in February.

The Section of Forest Measurements has been concerned chiefly with the material for the southern pine growth study. A combination of miscellaneous factors upset the number of original calculations and made necessary some changes in the original plans, which has delayed and set back the completion of the office end of the work. It is expected that this will be completed by the middle of February.

As a means of following up the work in the Section, an investigation has been made of machine tabulating devices, and it now appears that these can be adapted to the work of the Forest Service. So far, no project has been considered on which the use of these machines will not materially increase the accuracy and speed with which the work is turned out. It is probable that through its use the Section of Forest Measurements will be able to help the experiment stations very materially in keeping track of the records of individual trees and sample plots, as well as the correlation and computation of much of the data obtained in other studies.

Much of the delay in the issuance of the monthly report, so that it reaches the field a month or more later than the date of issue, is due to the lateness with which some of the stations send in their reports. If the reports were forwarded promptly, they could be furnished the field by the middle of the month instead of the middle of the second month, and much of the freshness of the material given would be retained. In most cases, the delay is caused by the lateness of one or two of the stations in sending in their material.

The issuance of the manuscript covers during the month makes possible the uniform binding of all manuscripts sent out by the stations. The covers are scored but once so that manuscripts of any size may be bound by scoring a second time for the thickness of the report before binding. The extra edge at the right should, of course, be trimmed to the same size as the front cover. The cover is to bear only the project designation in the upper left corner, the title of the report, the name and title of the author, the name of the station, and the date. On the original copy, the author should place his initials at the lower left corner with those of the station director approving the report, an indication of responsibility for the accuracy of the data and for the conclusions and recommendations presented.

The Editor's Office

What is a Footnote?

A footnote may be likened to a person who interjects remarks when you are telephoning; to one who shouts a word of admonition as you are about to pull the trigger; or to the Ancient Mariner who stoppeth the Wedding Guest. A footnote, at best, is that which trips one up, stops one short, interrupts, cuts in, diverts attention, and momentarily shatters continuity of thought. It is first cousin to the journalistic trick of carrying over a front page "story" and paralyzing an exciting climax with "(Continued on page 12, column 7)."

And yet a footnote may be a very important and useful part of a thesis or report when properly used, just as the interruption to the telephone conversation, the word of warning to the marksman, or even the well-known divagations of the Ancient Mariner may be when the circumstances warrant. The main thing is to avoid what George McLane Wood, Editor of the Geological Survey, calls the "footnote habit," or "the habit of putting into a footnote any matter that came to mind after the sentence or paragraph in which it properly belongs was first written." This habit takes another familiar form, which is evident in what might be called the "hairsplitting footnote," whose victim (referring to the writer rather than the reader) cannot let a statement in the text rest until he has footnoted all the variations of opinion on the point which he might otherwise seem to have overlooked. For example:

39/ Jones, however, has stated thus and so. Smith in 1916 found that it was otherwise. In contrast to these views is the opinion of the eminent Prof. Weissnichtwer contrariwise.

These opinions are probably either important enough to incorporate in the text or relatively unimportant enough to be relegated to the appendix or handled by reference to the bibliography.

It would be possible to make a long list of uses and abuses of the footnote, and they would all be wrong. In other words, there can be no fixed rule for footnotes. Their use is largely determined by the subject matter or general method of treatment. One guide for their use or elimination might be stated briefly thus:

A footnote diverts the reader's attention and disturbs his continuity of thought; it is therefore admissable only as the lesser of two evils.

If it will be less of an interruption to use a footnote than to embody the same thought in the text, or less disturbance to the reader to refer to additional data in a footnote than to turn at his convenience to the appendix, then the footnote is justified, certainly.

As a further guide it may be said that a book or pamphlet with no footnotes is generally an inviting prospect to the reader; and when footnotes begin to run three to a page, or to average three in ten pages in the publication as a whole, or to run to more than five lines of 6-point type each, something is wrong.

Miscellaneous

Fractions should not be used in tables if this can possibly be avoided. The small type in which tables are printed renders the superior and inferior figures in the fractions practically unreadable. Also, decimals make for uniformity in tables and so assist the reader. Decimals are generally preferable to fractions, except in nontechnical phrases in the text. It is obviously needless to write "0.5 feet farther" instead of "half a foot farther."

Scientific names of trees, shrubs, etc., when used in tables should not be underlined (italicized).

A Correction

To avoid confusion with text notes, it seemed best to indicate reference notes in Tables by letter instead of by number, and in the October Report it was accordingly stated: "Hereafter table footnotes should be designated with lower case italics..."

We have been notified that, desirable as it may be, certain mechanical restrictions at the Government Printing Office make this impossible. It will be necessary to number the table footnotes, consecutively for each table, as recent bulletins show them, and in accordance with the Printing Office procedure.

DENDROLOGY

Federal Horticultural Board Activities

In 1919 the Federal Horticultural Board promulgated its now famous Quarantine No. 37, which prohibits entrance into the United States of all plants carrying earth about their roots. Investigations had shown that the earth so brought from foreign countries carried larvae of very destructive insect pests, among which is the dread Japanese beetle, now spreading rapidly through New Jersey and Pennsylvania.

In order not to cripple American horticulture, this quarantine permits the importation of foreign plants, actually needed here for propagation, when the roots are absolutely free from earth. The Board stipulated at first that all roots must be washed to render them clear of soil. Later the Board agreed, under a guarantee of good faith by the Executive Committee of the American Association of Nurserymen, to permit roots to be shaken free from earth. It was contended by nurserymen that washing damaged plants (but this is not true). During the past year the Board's inspectors, however, have been finding more and more earth in importations from Holland, Germany and France. Such shipments were ordered cleaned before entry would be allowed, or returned to the country of origin. The considerable expense to importers of obeying these orders did not cure the neglect. Holland and French shippers resorted to a trick which, however, the Board's inspectors immediately saw through. Plants were sent in closely bound bundles, the outsides of which were washed clean, while plants inside the bundles were foul with earth. The Board has now ordered that no plants will be allowed entry unless the roots are washed clean at the point of origin.

A Little-known Chinese Pine for Trial

A small supply of the fresh seed of Pinus armandii has just been received through the Office of Foreign Seed and Plant Introduction for trial as a forest tree at the Appalachian Forest Experiment Station, at the Southern Experiment Station, and at Letchworth Park, to all of which seed has been sent.

Pinus armandii is one of the white pines, closely related to the Korean Pine (Pinus koraiensis) and the Cembrian Pine (P. cembra). Its natural range in China is imperfectly known at present. The seed received was collected in the mountains of southern China at an elevation

of about 3,000 feet in the Province of Yunnan, where the tree forms a mixed forest with chestnut. It is reported to attain a height of 80 to 100 feet and 2 to 3 feet in diameter. Pinus armandii is evidently widely distributed in China, various explorers having found it from southern China to Mongolia, where it grows only on the north slopes of mountains.

In the United States it is being successfully grown for ornament in New Jersey, and in protected sites in eastern Massachusetts. It is difficult to say now what the best planting range for it will be. Probably it will grow successfully from Pennsylvania southward.

Appalachian Forest Experiment Station

General

Constructive comments have been received from a number of present and prospective cooperators to whom the station's preliminary investigative memorandum had been sent. These will be considered in drawing up the 1924 program of work.

Among these comments are several strong recommendations for studies of chestnut blight problems. The blight did not cime in for specific recommendation as a project in the investigative memorandum because of uncertainty as to the status of efforts which are being made by Col. Joseph Hyde Pratt, manager of "Western North Carolina, Incorporated," to secure support for a comprehensive study of blight problems. There is no doubt of the desirability of chestnut studies by the station, but whether or not they should be taken up as a separate project remains to be seen. During the month Frothingham prepared a paper on silvicultural aspects of the chestnut blight situation for presentation at the winter meeting of the Southern Appalchian Section of the Society of American Foresters early in February. This paper includes recommendations for investigative work.

The status of cooperative work and plans for its extension by "working centers" were the subject of a memorandum prepared for the Branch by Frothingham.

Frothingham attended the sixth southern forestry congress at Savannah, January 28-30. This was generally conceded to have been the "livest" congress yet held. Southern pine problems, particularly those relating to naval stores, were the subjects for discussion; hardwood matters were conspicuous for their absence. A discussion of southern hardwoods will probably take place at the next congress, which will be held at Little Rock, Arkansas. J. S. Holmes, State Forester of North Carolina, was elected president of the congress for the current year.

The relation between National Parks and National Forests is another matter which has assumed considerable local interest during the month. An article by Barrington Moore, editor of "Ecology," and another by District Forester Reed, were published in the Asheville papers. These brought forth editorial articles in both papers strongly emphasizing the much greater need for National Forests than for National Parks for this region and also calling attention to the fact that the Appalachian National Forests were purchased specifically for use as National Forests and that there is no legal justification for designating all or part of any of them as National Parks.

A very helpful and stimulating visitor at the end of the month was Dr. F. C. Craighead, Forest Entomologist of the Bureau of Entomology, who discussed plans for cooperative work between the station and his office and made several field trips to our investigative areas. One of these was with McCarthy on an inspection of permanent plots established in burned pine stands. Trees which put out new foliage during 1923 and retained the green crown until October were pronounced by Dr. Craighead as infested with Ips and pine sawyer in June. He raised the question as to whether such trees had grown any wood in 1923. The answer is difficult to give with certainty. From his experience in spruce bud worm study, Dr. Craighead suggested that a section of bark be punched out at the time of tagging as a check on growth. A twelve-gauge shot gun-wad punch was suggested for the purpose. No dead trees on the plots had been killed by southern pine beetle.

The station staff was very glad to receive a brief visit from C. L. Forsling, Director of the Great Basin Experiment Station. He went over in considerable detail the results of Korstian's study of sap density in relation to environmental conditions in Utah. Forsling gave us some very valuable suggestions in connection with our study of grazing injury to hardwood reproduction. He was also interested in comparing notes on the organization and operation of forest experiment stations from the standpoint of the grazing experiment station.

Yield Studies

The preparation of yield tables for second-growtn yellow poplar has disclosed wide differences in density of stocking, which were not apparent when the sample plots were selected in the field. These differences in the case of stands in which the present stocking appears complete, undoubtedly reflect the histories of the individual stands with reference to past conditions of stocking. The method used to determine what should be regarded as the average of well-stocked plots and what plots were abnormal may be of interest.

There are four variables to be considered: density of stocking (measured in cubic feet per acre), height, site, and age. Site and age appear to be variables along the general line which would be established by a height-volume curve. Such a curve was drawn on the basis of the cubic volumes per acre and the average dominant heights of the

sample plots. The volumes per acre of plots representing all sites indiscriminately tended to fall in a narrow band, in this case straight, up to the limit of height growth, permitting the drawing of curves of maximum, average and minimum stocking. This process assisted materially in arriving at an average figure for stocking, which could be easily converted to age by use of the height-age site curves, previously constructed. The method seems to offer an approximate guide to average stocking of so-called "well-stocked stands," and a means for detecting plots which vary widely from the average.

In the case of southern white cedar the differences in density of stocking were not so marked; but it was found that even when only an occasional pond pine or swamp hardwood occurred in the dominant cedar stand there would be a drop in volume per acre which had to be compensated for. Overstocking, however, is also a probable source of reduction in yield in some of the white cedar stands.

The primary need in yield studies seems to be for an accurate measure of density of stocking.

Fort Valley Forest Experiment Station

The main research event of the month was the District Investigative Committee. Two new projects were approved by the committee. One of these is a study of thinnings which has long been deferred for lack of funds. The time is ripe for initiating this investigation because on at least one Forest a market for small material already exists, and the time is believed to be near when other Forests will present similar opportunities. The other new project is an administrative study of brush disposal. It is essentially a study of technique aiming at a higher standard of efficiency in handling brush on timber sales.

Pearson has prepared a report on the records of two dendrographs on yellow pine. From the forester's viewpoint the most important disclosure is in regard to the period when diameter growth occurs. One tree began to expand on May 16 and the other about June 1. Both had practically finished the season's growth by September 1. This information is valuable in connection with the periodic measurement of trees to determine the rate of diameter growth, because such measurements should be made when the trees are in a quiescent state as regards diameter accretion.

The members of the experiment station attended the Coconino ranger meeting January 22-24. Pearson gave a talk on the work of the experiment station. Judging by the number of questions asked, the rangers are taking a keen interest in real forest problems. On January 25 Pearson accompanied several of the timber sale men on a visit to one of the S. & M. operations where marking, brush piling and green brush burning were inspected.

Fremont Experiment Station

January Activities

The first half of January was used by Bates and to some extent by Roeser in preparing material for the investigative program. The committee meeting was held in Denver January 19 and 21, and since the program has already gone in, there is no need to discuss it in detail. This year's meeting has developed two or three points in organization rather forcibly. (1) Since the District Forester, even though greatly interested, cannot give the time to preside at the meetings, there should be a definitely appointed vice chairman to conduct the meetings, and direct the discussion in more orderly fashion than has prevailed in the past. The two persons whose reports are mainly heard, Johnson and Bates, are incapacitated because of their other obligations, so that the chief of Forest Management is naturally suggested as the person most familiar with the program and the needs. (2) There is need for better correlation of all the reports and suggestions for new work before the meeting, and as the responsible head of Research in the District, Bates will hereafter go over the entire program before the meeting. (3) There was the usual amount of discussion as to what are administrative and what investigative projects, the writer maintaining that the line is broken down as soon as the Supervisor, who thinks he needs an administrative project for his own special problem, has to call on Research or the District office for assistance or advice. The present line of distinction in District 2 is that an administrative project is one that the District wants at any cost, and an investigative project is one that District men are willing to let Research shamble along with as best it can. This sort of a distinction is demoralizing to organization and can best be remedied if the Branch of Research takes a more liberal attitude toward District knowledge of its own needs, assuming that any problem of the District is worthy of the best assistance we can give it.

On January 11 Bates, together with Keithley of the Pike and City Forester McKown, met with a special committee of the local automobile club to advise on nursery work in preparation for an active campaign of planting along highways leading into Colorado Springs. The automobile club will maintain its own nursery for this purpose, buying seedling stock or seed and retaining it until good size is attained.

The end of the month was spent by Bates on the lodgepole seed report which now, in the first few days of February, is receiving its final "hammering out." This is not a reflection on Miss Skamser's touch but expresses our common feeling toward the report.

Roeser, after completing his report on the tree breeding or selection problem, has been working largely on management data. The need for the proposed summary of increment data is well illustrated by the fact that the Pike officials, who are attempting to draw up a tentative management plan for the Forest, are working on a basis of an annual increment of 18-42 board feet, whereas our data indicate that productive areas should be rated at least as high as 25 cubic feet or 125 board feet. This situation is also indicative of the need for field work which has been outlined in the program.

February

Roeser will continue work on sample plot data to arrive at any possible increment figures which can be of use.

Ranger Robertson will return to duty February 11, and arrangements have been made with Operation to keep both Gibbs and Robertson on until June 30, so that our fuel problem may be made less acute and other manual work may be caught up. While apparently in good health, Robertson is considerably disappointed at the failure to obtain a transfer to a lower altitude, and it is now more apparent that this is what he needs.

Bates will be largely engaged in preparation of material for the Madison meetings, but it is hoped also that an article on the soil problem and one on the light experiments can be gotten under way before March 10.

Lake States Forest Experiment Station

The outstanding things for January have been the preparation of the statement for presentation to the Advisory Committee of the Pulp and Paper Industry at their meeting in Washington on February 7, the completion of the review of previous investigations by other agencies in each of the three States as a preliminary to the formation of our program, the receipt of recommendations from all but two of the fifteen organizations which were requested to nominate representatives for the Advisory Council of the Station, and the meeting of the Tri-State Development Congress at Duluth.

The nominations which have been suggested for the Station Advisory Council have been most gratifying and include outstanding figures in forestry and related lines in the region. Two of the State universities and agricultural experiment stations are to be represented by the deans of the agricultural colleges, the mining industry by a Mr. Newett, who recently published a good article on the relation of forestry and timber supply to the mines of the region, the Northern Hemlock and Hardwood Manufacturers' Association by its president, Mr. Osborn, and the wood-using industries association by its president, Mr. Parsonage. Other

nominations include Professor A. K. Chittenden, H. Lundin, D. C. Everest, W. T. Cox and C. L. Harrington. An advisory council composed of men of this caliber promises to be most helpful.

Other activities during the month include the preparation of the working plan for the construction of cordwood and cubic volume tables for aspen and paper birch, the completion of the analyses of the yield plots secured in lower Michigan last fall and the preparation of preliminary volume and yield tables from them, the summary of existing volume tables of different kinds for the species in this region, partly as suggestions for inclusions for the proposed bulletin to be prepared in Washington, and partly for use in our own work, and a good start has been made in the classification of our large stock of pamphlets and publications which are not a part of the regular library.

On January 24th and 25th the fourth annual convention of the Tri-State Development Congress, which includes Michigan, Wisconsin and Minnesota, was held at Duluth. About 75 delegates were in attendance, including Messrs. Zon, Mitchell and Hansen, from the Station. Mr. Zon spoke at the morning session January 24th on "The Place of Forestry in Land Utilization." The meeting was exceptional as a land development conference in that colonization schemes were given practically no consideration, the discussion being confined to forestry, taxation, including the proper method of taxing forest lands, and transportation. While taxation received first consideration, forestry was given a very important place in the discussion, it being recognized that it must take a prominent place in the future development of this region. The congress showed great interest in the work of the Lake States Forest Experiment Station and in the report of its Findings Committee expressed its appreciation of the importance of the work being undertaken and its desire to cooperate in any way possible.

A field trip to the Cloquet Experiment Station following the meeting had been planned and a number of the delegates had expressed their desire to take it in. Unfortunately, however, severe weather conditions prevented the excursion from taking place.

An agreement was signed during the month by which the U. S. Bureau of Entomology, the Entomology Division of the University of Minnesota and the Forest Experiment Station will cooperate in the study of forest insect problems of the Lake States with a view to their control. The Bureau of Entomology will select a technical assistant and contribute $500 to the work during the present fiscal year and $2500 next fiscal year. This work assumes particular importance when the tremendous damage which has been done by the larch sawfly is considered and the recent threat of similar damage to another important species by the jack pine sawfly. We are also glad to have the principle of cooperation in these studies with the Forest Experiment Station established.

The Secretary of Agriculture made a very brief visit to the Station at the time of his attendance at the Farmers and Homemakers Short Course Week at University Farm.

Mr. Zon left on January 29 to go to Washington primarily to attend the meeting of the Advisory Committee of the Pulp and Paper Industry on February 7, at which meeting he will present a statement as to what the Lake States Station can contribute to the solution of the industry's problems. He will stop on the way at Madison, Chicago and Milwaukee, at the latter place to discuss possible cooperation in working up the large amount of valuable data on the swamps of northern Michigan which has been secured for Marquette University by the Great Lakes Forest survey.

Mr. Zon made addresses during the month as follows:

January 8 - Rural Community Club, North St. Paul.
January 10 - Business and Professional Men's Association of Minneapolis.
January 17 - Minneapolis Professional Men's Club.
January 21 - Annual Meeting of Northern Pine Manufacturers' Association of Minneapolis.
January 24 - Tri-State Development Congress, Duluth, Minn.
January 30 - Annual Meeting Northern Hemlock and Hardwoods Manufacturers' Association, Milwaukee, Wis.

Cloquet

The past year has seen many changes in the personnel of the Cloquet Station. Mr. Malcolm MacGillivray, who has been foreman at the station for the past ten years, resigned. Mr. John A. Stillwell, formerly superintendent of Itasca State Park, has been appointed foreman. Mr. G. H. Wiggin, who has been acting in charge since 1921, resigned January 30 to become office manager of the Pike Bay Lumber Company at Tower. He is to be succeeded by Mr. T. Schantz Hansen, who has been connected with the Station since 1919. Mr. Raymond E. Stevens, a graduate of the class of 1923 at Minnesota, has been appointed as technical assistant.

Upon a petition sponsored by the Game and Fish Club of Cloquet, the station was created a game preserve and Mr. Stillwell was made game warden. The area is too small to be a refuge for big game but it should prove a good source of supply for game birds.

The recreational features of the station are becoming more and more appreciated. During the past year, in cooperation with the Cloquet Auto Club, a rather interesting scenic driveway through the station grounds has been developed. There has also been developed a picnic ground supplied with fireplaces and tables. Several additional features of this nature are planned for the future.

An arboretum containing blocks of 50 specimens of each of the species used in planting work at Cloquet has been developed. This is located along one of the main traveled roads. It should prove a valuable educational feature.

In cooperation with the State Forest Service considerable Norway pine cones were secured. These were extracted in the fall, approximately 250 bushels yielding 142 pounds of clean seed - a yield of better than a half a pound of seed to each bushel of cones.

Several forties were marked for a clean-up cutting in the fall. These areas are now being cut rapidly. The indications are that the cutting will yield some pulpwood and a few logs, but mostly firewood which will be used at the station. Over 2,000 ties have already been cut in the sale of dead and down timber.

Northeastern Forest Experiment Station

January was devoted primarily to the Census of Forest Investigations in the Northeast, to the development of plans for the Forest Research Council, and to the working up of field data secured from the spruce growth and yield study. Personal visits were made to a number of other organizations interested in forest research as a means of getting in closer touch with them and of securing first-hand information regarding their investigative activities. Meyer covered Cornell, Syracuse, the New York Conservation Commission, and other State officials in Albany, the Rhode Island State forest commissioner, agricultural experiment station, extension service, Brown University, and other interested agencies in Rhode Island. Behre covered Yale University, the Connecticut State forester, agricultural experiment station, agricultural college and extension service, the New York and Brooklyn Botanic Gardens, American Museum of Natural History, and various interested individuals and companies in New York City. Dana covered Harvard University, Clark University, the Massachusetts Conservation Commission, New Hampshire State forester, New Hampshire agricultural experiment station, extension service and agricultural college, the forest commissioner of Maine, and the Maine Agricultural College and experiment station. Much interesting information was secured and contacts established which will be helpful in the future work of the station.

Suggestions continued to come in throughout the month as to possible members of the Forest Research Council. The central idea seems to meet with almost unanimous approval, although some have apparently failed to grasp the idea that the council is to serve in an advisory capacity to other research agencies, as well as to the experiment station. A rather unexpected amount of interest has been displayed by the railroads, personal letters having been received from the presidents of at least four of these. Considerable interest has also been displayed by several of the colleges, offers of the use of college-owned land as sub-

stations having been received from Dartmouth College, Columbia University, andConnecticut College. Arrangements have been made to devote the entire winter meeting of the New England section of the Society of American Foresters to forest research, which will also be one of the topics for discussion at the winter meeting of the New York section.

Progress has been made on working up the data secured last fall on the spruce growth and yield study. The results so far secured are naturally somewhat tentative, and do not bring out any particularly interesting points not mentioned in previous reports.

Talks were given by Dana to the student body of Massachusetts Agricultural College and to the Lewiston and Auburn (Maine) Rotary Clubs. Several talks by various members of the staff are scheduled for February.

Priest River Forest Experiment Station

All members of the staff except Kempff were present at all or part of the sessions of the District Investigative meeting which was held during the first week of January. District Forester Morrell was chairman of the Investigative Committee andWeidman was secretary.

In addition to preparing for, and attending the District Investigative meeting, Weidman was engaged for about 10 days in the preparation of the Annual Investigative Report and Program for the District. During the last few days of the month he gave his attention to public requirements, in anticipation of the Madison meeting.

Larsen spent the first week of the month chiefly on work in connection with the District Investigative meeting. He then finished the progress report of his study on reproduction after fires. This report is waiting its turn to be typed. Nine or ten progress and final reports of reforestation projects at Priest River have been receiving considerable of Larsen's attention. Some of these are finished and others still require a little work. They deal with the original reforestation projects established at the experiment station about 10 years ago. Larsen also finished a report covering the results of germination on various ground surfaces. He is now preparing an article for the Journal of Forestry on factors affecting reproduction after logging in the white pine type.

Gisborne has been engaged in compilation work on both of his fire study projects. A progress report for one of them has been started. Preparation is now being made for the fire studies program of the Madison meeting. In connection with calibrating the duff hygrometers, Gisborne is using the laboratory facilities of the Botany Department at the University of Montana. The faculty members there are interested in his work of determining duff moisture contents, and have been able to give useful suggestions.

Wahlenberg spent most of the first week of the month in Missoula in connection with the District Investigative meeting. Upon his return to Savenac Nursery he installed 15 seed tests. Thereafter he was engaged on progress reports of several forestation projects.

Most of Haig's efforts are still required in connection with compiling the mass of figures resulting from the white pine yield study. To vary the monotony of that work he occasionally assists at other jobs.

At the experiment station Kempff has had to give a considerable share of his time to scaling, and other phases of timber sale work on the two sales now in progress. Some time had to be given to the removal of deep and heavy snow from the roofs of the station buildings and to other maintenance work.

The professional cougar hunters who hunted on the experimental forest last winter were again at the experiment station for several days during the month. The hunters were again successful this year. One adult cougar was killed and three kittens, about six weeks old, were captured alive. An incident of this sort helps to give a little diversion to the life of the resident officer of the experiment station who is isolated there during the long winter months.

Wind River Experiment Station

The greater part of the month has been spent on compilation and analysis of fire study data. Simson has been compiling the weather data and preparing the summary in curves. Part of his time is taken up with routine and station maintenance. Hofmann spent several days checking the galley proof of a bulletin on "Natural Reproduction of Douglas Fir in The Pacific Northwest." The remainder of his time has been given to fire study data and routine. It is hoped that this can be completed during February.

Two newspaper articles have been prepared; one on "Natural Reforestation in the Douglas Fir Region," published in the Oregon Sunday Journal; and the other on "The Wind River Experiment Station," to be published in the Skamania County Pioneer at Stevenson, Washington.

California: District 5

The District Investigative Committee meeting was held January 10 and 11. For the first time Mr. Miller and Mr. Burke of the Office of Forest Entomology, met with the committee. The University of California Forestry School was also represented by Professor Donald Bruce. The committee urged the need of several new studies. Among these were methods of cutting and natural reproduction in the Coast Douglas fir type on the Klamath. It is desired to try the method of slash disposal used in D-6 but it has not yet been determined whether viable seed is present in the duff or whether satisfactory reproduction can be secured

after broadcast slash burning. A similar study is needed in the sugar pine - fir type, where little progress has yet been made in securing natural reproduction after cutting.

The acute situation in the market for lumber from inferior species is making it difficult to get operators to remove mature incense cedar from sale areas, interfering seriously with our cutting policies. Products was urged to undertake a study of uses for incense cedar with a view to assisting operators to dispose of this material.

The committee again recommended that assistance be given Research, sufficient to permit Show to complete the economic study begun some time ago.

Show and Kotok have spent several days correlating weather and fire data, including the lightning storm summaries recently made by Mr. Goldsmith. Mr. Show also submitted the report on public requirements and desirable practice for the redwood region.

Ranger McMurphy, from the Plumas, was detailed to Research for a few days, assisting Miss Vinther in tabulating the current year's fire data and in the methods of cutting summaries.

Dunning's time, except for leave, has been spent almost entirely in the compilation of methods of cutting data. The summaries for the eight Plumas plots at Massack are nearing completion.

Library

During the month of January there were 947 loans of books and periodicals from the library, and 151 members of the Service and others consulted the library in person.

Index cards were made for 244 books and periodical articles, to be added to the catalogue.

Manuscript News Notes

Wind River

"Natural Regeneration of Douglas Fir in the Pacific Northwest." J. V. Hofmann. (Proof - Dept. Bulletin 1200).

Fremont

"Checking of Erosion by Willow Planting." C. G. Bates (to American Forestry).

Priest River

"Progress in Forest Fire Research." H. T. Gisborne. (to Journal of Forestry).

"Studies on Coeur d'Alene National Forest." J. A. Larsen. (Progress Report.)

"Natural Reproduction After Fires." J. A. Larsen. (Progress Report.)

District 5

"Preliminary Summary. Cow Creek Methods of Cutting Plot." D. Dunning. (Progress Report.)

Lake States

"Promise of White Pine in the Lake States." J. Kittredge, Jr. (to Lumber Trade Journals.)

"White Pine Comes Back in Wisconsin." J. Kittredge, Jr.

Northeast

"Is Taper Based on Form Quotient Independent of Species and Size?" C. E. Behre. (to Journal of Forestry.)

Fort Valley

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